

## REMARKS/ARGUMENTS

Responsive to the Office Actions mailed November 16, 2007 and January 29, 2008. The Office Action of January 29, 2008 does not indicate that the previous Office Action has been withdrawn. Therefore, applicant responds to both Office Actions.

### I. NON-PRIOR ART MATTERS

- A. The Office Action mailed January 29, 2008 stated that "the information disclosure statement filed 20 June 2005 fails to comply with 37 CFR 1.98(a)(1)....

A Supplemental Information Disclosure Statement was filed on February 19, 2008.

- B. The Office Action mailed January 29, 2008 objected to the Specification as having a title that is not descriptive.

Applicant herein changes the title to "Method and Device for Determining the Living Character of a Finger Bearing a Fingerprint."

- C. The Office Action mailed January 29, 2008 objected to the disclosure as containing legal language.

The specification has been amended herein to the extent the applicant understands the Examiner's objection, which is not entirely clear.

- D. The Office Action mailed January 29, 2008 rejected claims 8-10 under 35 USC 112, first paragraph, as failing to comply with the written description.

Claim 8 is amended herein and applicant asserts that it now meets the requirements of 35 USC 112, first paragraph. The claim now contains only one comparison step.

Claims 9 and 10 are dependent on amended claim 8 and therefore also meet the requirements.

- E. The Office Action mailed January 29, 2008 rejected claims 8-14 under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 8 and 11 are amended herein and applicant asserts that they now meet the requirements of 35 USC 112, second paragraph.

Claims 9 and 10 are dependent upon claim 8 and claims 12 - 14 are dependent upon claim 11 and now are also acceptable.

## II. PRIOR ART MATTERS

- A. The Office Action mailed November 16, 2007 rejected claims 8-13 under 35 USC 102(e) as being anticipated by Gozzini U.S. 6,665,428. Applicant respectfully traverses this rejection.

A single prior art reference anticipates a claimed invention only if it discloses each and every claim element.<sup>1</sup> “For a prior art reference to anticipate...every element of the claimed invention must be identically shown in a single reference...These elements must be arranged as in the claim under review.”<sup>2</sup>

Regarding claim 8, Gozzini does not disclose:

- (b) taking of an image of the fingerprint carried by the finger by means of the optical system;
- (c) measurement of a particular characteristic of the image;
- (d) deducing of a range of values for the electrical quantity of the finger judged in principle acceptable using a relationship established between values of a particular characteristic of the image and a range of said values for the electrical quantity of the finger judged acceptable.

The Office Action has not shown where Gozzini discloses (b) taking of an optical image of the fingerprint carried by the element by means of an optical system. The cited portion of Gozzini (col. 1 line 51) is as follows:

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<sup>1</sup> *Structural Rubber Prod. Co. v. Park Rubber Co.*, 749 F.2d 707, 223 USPQ 1264 (Fed. Cir. 1984)

<sup>2</sup> *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990)

Fingerprint detection is most commonly achieved at least partially through capacitive coupling with the finger. In such embodiments, skin surface 408 and sensing electrodes 404 40 each form a capacitor having a capacitance proportional to the distance between a respective sensing electrode 404 and the overlying skin surface 408. Thus, for example, the capacitance measured by sensor 402 at a point near the top of a fingerprint ridge 410 by a sensing electrode separated 45 from skin surface 408 by a distance  $d_{x,y}$  (where x and y denote the position of the respective sensing electrode within the two-dimensional sensor array) will differ from the capacitance measured through another sensing electrode at a point near the bottom of a fingerprint valley 412, where the 50 intervening distance  $d_{x,y+2}$  is greater. In this manner an electronic image of the fingerprint may be captured for further processing.

The above clearly shows that the “electronic image” is not captured by an optical system (which Gozzini does not teach) but by a two-dimensional sensor array wherein the sensors are capacitance-measuring electrodes. Gozzini does not disclose that an optical image of the fingerprint is taken and used in the method. Gozzini only discloses that the distance between the sensor and the finger is measured for further analysis. The capacitance will vary according to the measured distance but it is not mentioned that the electrical value is related to an optical characteristic of the finger.

As to element (c), “the image” has antecedent basis of the optical image, hence Gozzini does not disclose measurement of a particular characteristic of the optical image.

As to element (d), “values of a particular characteristic of the image” refers to values of a particular characteristic of the optical image. Further, Gozzini does not disclose “deducing of a range of values for the electrical quantity of the finger judged in principle acceptable using a relationship established between values of a particular characteristic of the image and a range of values for the electrical quantity of the finger judged acceptable.”

Claim 8 is therefore allowable.

Claims 9-10 contain additional elements or limitations beyond allowable claim 8 and are also allowable.

Claim 11 is allowable for reasons similar to those given above in regard to claim 8.

Claims 12-13 contain additional elements or limitations beyond allowable claim 11 and are also allowable.

B. The Office Action mailed November 16, 2007 rejected claim 14 under 35 USC 103(a) as being unpatentable over Gozzini in combination with Lee.

The Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.<sup>3</sup> If the Examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of non-obviousness.<sup>4</sup>

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.<sup>5</sup>

Applicant respectfully traverses the § 103 rejection because the office action has not established a *prima facie* case of obviousness.

1. The cited prior art does not teach or suggest all the claim limitations.

Applicant respectfully submits that the combination does not disclose an optical system with all the claimed elements as rejected above in the 102 rejection.

Claim 14 contains additional elements or limitations beyond allowable claim 11 and is also allowable.

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<sup>3</sup>MPEP Sec. 2142.

<sup>4</sup> Id.

<sup>5</sup>Id. (emphasis supplied)

- C. The Office Action mailed January 29, 2008 rejected claim 8 as best understood by the Examiner under 35 USC 102(e) as being anticipated by Muramatsu. Applicant respectfully traverses the rejection.

A single prior art reference anticipates a claimed invention only if it discloses each and every claim element.<sup>6</sup> “For a prior art reference to anticipate...every element of the claimed invention must be identically shown in a single reference...These elements must be arranged as in the claim under review.”<sup>7</sup> “This standard is very strict. It requires an exact correspondence between the contents of the event and the claim limitations, such that each and every element recited in the claim is present in the anticipatory event.”<sup>8</sup>

Muramatsu does not disclose:

- (a) measuring an electrical quantity of the object.

The Office Action states that an electrical current generated by a photodiode upon light from the object striking the photodiode and then amplified and extracted results in an electrical signal corresponding to the light.

Whether this is the case or not is moot, because the generated electrical current is not an electrical quantity of the finger. Rather it is an electrical quantity corresponding to light.

Miramatsu discloses a method and a sensor to verify the living character of a finger carrying a fingerprint. The fingerprint is illuminated by a light beam which comprises an IR portion and a visible light portion.

The sensor receives the light beam which is reflected by the finger and comprises a first part which is sensitive to IR and a second part which is sensitive to visible light. The image captured by the first part is clear if the finger is alive and non-clear in case of a replica (col 6, lines 10-15).

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<sup>6</sup> *Structural Rubber Prod. Co. v. Park Rubber Co.*, 749 F.2d 707, 223 USPQ 1264 (Fed. Cir. 1984)

<sup>7</sup> *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990)

<sup>8</sup> *Moy's Walker on Patents*, 4<sup>th</sup> ed., § 8.11 (citing *In re Spada*, 911 F.2d 705, 708, 15 U.S.P.Q.2D(BNA) 1655 (Fed. Cir. 1990))

The method consists of a comparison of the clarity of the input fingerprint images between the block with IR sensitivity and the block without IR sensitivity (col 8, lines 9-12).

The object of claim 8 is different from the object disclosed by Miramatsu.

Indeed, claim 8 is relative to an electrical quantity of the finger, meaning the electrical quantity is directly measured by contact with the finger.

Miramatsu proposes an electrical quantity which is related to the image of the fingerprint and not directly related to the finger.

Miramatsu discloses as step a) a step of measuring an electrical quantity relative to the image of the fingerprint and not a step of measuring an electrical quantity of the finger itself.

In addition, the object of claim 8 comprises also a step of deducing a range of acceptable values from the measurement of the characteristic of the image. It means that the process measures this characteristic and depending on this value, it deduces an interval of values, among several, inside which the electrical quantity has to be in order to validate the living character of the finger.

In Miramatsu, the process realizes a comparison between two images and deduces the living character of the finger if the clarity is the same. There is no direct cross-checking with electrical quantity and there is no choice between several acceptable intervals for this quantity.

Muramatsu thus does not disclose:

(d) deducing of a range of values for the electrical quantity of the object judged in principle acceptable using a relationship established between values of a particular characteristic of the image and a range of said values judged acceptable;

Again, the electrical signal from the photodiode of Muramatsu is not an electrical quantity of the finger. Therefore, Muramatsu also does not disclose step (d), which is dependent on step (a). That is, the same electrical signal is involved in step (a) and step (d), and neither of these steps involves an electrical quantity of the finger.

For the same reason, Muramatsu does not disclose step (e). A range of values for an electrical quantity of the object has not been deduced in step (d), and the same electrical quantity was not measured in step (a), so there is no way for Muramatsu to compare the two to establish the living character of the object.

D. The Office Action mailed January 29, 2008 rejected claims 8-13 under 35 USC 103(a) as being unpatentable over Nysaether in combination with Muramatsu. Applicant respectfully traverses the rejection.

The Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.<sup>9</sup> If the Examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of non-obviousness.<sup>10</sup>

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.<sup>11</sup>

Applicant respectfully traverses the § 103 rejection because the office action has not established a *prima facie* case of obviousness.

**Regarding claim 11**, the two references, even if combined, do not disclose:

- (b) an optical system for taking an image of the fingerprint carried by the finger by means of the optical system
- (c) means for measuring a particular characteristic of the image;
- (d) means for deducing a range of values for the electrical quantity judged in principal acceptable using a relationship established between values of the particular characteristic of the image and a range of values of the electrical quantity of the finger judged acceptable; and

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<sup>9</sup>MPEP Sec. 2142.

<sup>10</sup> Id.

<sup>11</sup> Id. (emphasis supplied)

(e) means of validating the living character of the finger when the measured value of the electrical quantity of the finger belongs to the deduced range.

The Examiner is referred to the discussion under the 102(e) rejection above for applicant's detailed arguments in regard to Miramatsu.

Nysaether discloses a sensor to ease the capacity measurement of the fingers even in the case of wet or dry fingers. From electrical measurements, the sensor creates an image of the fingerprint. The electronic components have to be chosen in such a manner that the contrast of the ridges and the valleys is not too low ([0039]); it means that the contrast has to be sufficient.

In regard to Nysaether, the Office Action admits that Nysaether does not specifically disclose an optical system for taking an image of the fingerprint carried by the finger and for measuring a particular characteristic of the image thus taken nor means for validating the value of the electrical quantity measured if this measurement is situated in the range. Nysaether discloses only a fingerprint sensor comprising only a means for measuring an electrical quantity. The image is not a captured image but an evaluated image.

Applicant further asserts that Nysaether does not disclose a means for establishing a relationship between the values of the particular characteristic of the image and a range of values of the electrical quantity of the object judged acceptable.

Thus, there is no prima facie case of obviousness because the references, even if combined, do not disclose every element of claim 11.

Further, the Examiner's statements of reasons for combining Nysaether and Miramatsu are moot because the Examiner does not discuss the electrical quantity of the finger which is claimed.

**In regard to claim 12:** Nysaether does not disclose an optical system for taking an image of a fingerprint. Therefore, the further limitations of claim 12 in the claimed Markush group are also not disclosed. The Examiner's argument for Nysaether's teaching of such an optical system is simply incorrect.



Further, the Examiner's statements of reasons for combining Nysaether and Miramatsu are moot because the Examiner does not discuss the electrical quantity of the finger which is claimed.

**In regard to claim 9**, since it was rejected for the same reasons as listed for claim 12, it is also allowable for the same reasons as argued against the obviousness of claim 12.

**In regard to claim 13**, claim 13 has additional elements or limitations beyond allowable claim 12 and is also allowable.

**Regarding claim 10**, since it was rejected for the same reasons as listed for claim 13, it is also allowable for the same reasons as argued against the obviousness of claim 13.

- E. The Office Action mailed January 29, 2008 rejected claim 14 under 35 USC 103(a) as being unpatentable over Nysaether in combination with Murmatsu as applied to the claims above, and further in view of Lee. Applicant respectfully traverses the rejection.

Claim 14 has additional elements or limitations beyond allowable claims 12 and 13 and is also allowable.

- F. The Office Action's reasons for making any of the above combinations are insufficient.

Although evidence of a motivation to combine need not be found in the prior art reference themselves, if it is found in the knowledge of one of ordinary skill in the art or, in some cases, from the nature of the problem to be solved, the Office Action must do more than simply discuss the ways that the multiple prior art references can be combined to read on the claimed invention. Rather, the Office Action must point out "specific information in [the two references] that suggest the combination."<sup>12</sup> "The Board [must] explain what specific understanding or technological principle within the knowledge of one of ordinary skill in the art would have suggested the combination."<sup>13</sup>

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<sup>12</sup> See *Dystar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1366, 80 USPQ2d 1641, \_\_\_ (Fed. Cir. 2006) (citing *In re Dembiczak*, 175 F.3d 994, 999-1000 (Fed. Cir. 1999))

<sup>13</sup> *Id.* at 1367 (citing *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998))

In *KSR Int'l Co. v. Teleflex Inc. et.al.*<sup>14</sup>, the Court re-affirmed that:

Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.<sup>15</sup>

Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.<sup>16</sup>

There is no suggestion to combine the teachings of Nysaether, Miramatsu, and Lee as advanced by the Examiner, except from using Appellants' invention as a template through a hindsight reconstruction of Appellants' claims. *Ex Parte Crawford et al*, Appeal 20062429, Decided May 30, 2007.

Miramatsu discloses a fingerprint sensor comprising an optical system for taking an image, means for comparing the clarity of the two images; and means for validating the living character of the finger, BUT Miramatsu does not disclose means for deducing an interval of value for the electrical quantity from the value of the characteristic of the image.

In addition, Nysaether does not disclose these means of deducing. Indeed the values of the electronic components are evaluated to obtain a good image of the fingerprint, BUT, the values of the electronic components are not disclosed as being variable in relation to a characteristic of the image. Nysaether discloses only that the electronic components are chosen to obtain a good fingerprint evaluated image in case of a wet or dry finger.

The Examiner has not provided a sufficient reason or explicit analysis of why the disclosures of the references should be combined. *Ex Parte Erkey et al*, Appeal 20071375, Decided May 11, 2007.

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<sup>14</sup> *Ksr Int'l v. Teleflex, Inc.*, 127 S.Ct. 1727. 82 USPQ2d 1385 (2007)

<sup>15</sup> *Id.*

<sup>16</sup> *Id.*

- G. The Examiner has not applied the test of *Graham v. John Deere Co.*<sup>17</sup> The MPEP requires the Examiner to do so.<sup>18</sup> However, the Examiner has made no finding of the level of ordinary skill in the art.<sup>19</sup>


The Federal Circuit routinely vacates conclusions of obviousness when the factfinder failed to make *Graham* factor findings.<sup>20</sup> This is especially so when the factfinder makes conclusory statements that “do not fulfill the agency’s obligation’ to explain all material facts relating to a motivation to combine.”<sup>21</sup>

For the above reasons, Applicant respectfully requests the allowance of all claims and the issuance of a Notice of Allowance.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 02-3732.

Respectfully submitted,

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<sup>17</sup> 383 U.S. 1 (1966)

<sup>18</sup> MPEP § 2141

<sup>19</sup> MPEP § 2141.03

<sup>20</sup> *Dystar*, 464 F.3d 1366 and cases cited therein.

<sup>21</sup> *Id.*